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## *Adelostoma (Zarudnyonymus) borowieci* n. sp. from India\* (Coleoptera: Tenebrionidae: Adelostomini)

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ABSTRACT. *Adelostoma (Zarudnyonymus) borowieci* n. sp. from India is described and compared with its relatives. The colour photo of habitus is provided. The genus *Adelostomoides* CARL, 1991 syn. nov. is synonymized with the subgenus *Zarudnyonymus* SEMENOV & BOGATSHEV, 1947. *Zarudnyonymus persis* SEMENOV & BOGATSHEV, 1947 syn. nov. is proposed as synonym of *Adelostoma (Z.) grande* HAAG-RUTENBERG, 1879.

Key words: entomology, taxonomy, Coleoptera, Tenebrionidae, Adelostomini, *Adelostoma*, *Zarudnyonymus*, *Falsaspila*, *Psaryphulum*, *Adelostomoides*, new species, new synonym, Asia, India, Oriental Region.

### INTRODUCTION

The genus *Adelostoma* was established by DUPONCHEL (1827) for *Adelostoma sulcatum* DUPONCHEL, 1827 (by monotypy). The position and relationships of many species are unclear and revision of entire genus is highly needed.

The genus *Zarudnyonymus* was erected by SEMENOV & BOGATSHEV (1947) with *Zarudnyonymus persis* SEMENOV et BOGATSHEV, 1947 as type species (by monotypy). Later Koch (1952), in his monograph about Eurychorini (= Adelostomini sensu BOUCHARD et al. 2005), without knowledge of the existence of already described *Z. persis*, designated new genus *Falsaspila* KOCH, 1952 based on *Adelostoma batesi* HAAG-RUTENBERG, 1875 (as a type species), *A. abyssinicum* HAAG-RUTENBERG, 1875 and *A. hirsutum* KOCH, 1935. In 1965 CANZONERI (1965) described *Falsaspila perissinottoi*. ARDOIN (1976) added new species *Zarudnyonymus gilloni* ARDOIN, 1976 and synonymized *F. perissinottoi* with

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*Z. persis* and the genus *Falsaspila* with the genus *Zarudnyonymus*. KOCH (1952) also established new genus *Psaryphulum* KOCH, 1952 with *Adelostoma abbreviatum* HAAG-RUTENBERG, 1875 (type species), *A. pygmaeum* HAAG-RUTENBERG, 1875, *Psaryphulum damara* KOCH, 1952 and *P. machadoi* KOCH, 1952. This genus was later synonymized by KASZAB (1981) with the genus *Zarudnyonymus*. However, KWIETON (1983) distinguished the genus *Zarudnyonymus* and *Psaryphulum* and downgraded both of them to subgenus level of the genus *Adelostoma*, so this genus is presently divided into three subgenera: *Adelostoma* (s. str.); *Zarudnyonymus* and *Psaryphulum*.

All members of this genus are flightless, psammophilous and according to KOCH (1952) are distributed in Southern Spain, Northern Africa, Mediterranean Asia, northern part of the Ethiopian region, Saharan region and occur also in Iran and newly in India.

This paper presents description of the new species of the genus *Adelostoma* – the subgenus *Zarudnyonymus*.

#### MATERIAL AND METHODS

The new species was compared with the nearest occurring members of the subgenus *Zarudnyonymus* – *A. (Z.) grande* from Iran and *A. (Z.) batesi* from Arabia. The rest of the known species – *A. (Z.) gilloni* and *A. (Z.) abyssinicum* are distributed in Nigeria, Senegal and Ethiopia, Somalia, Egypt respectively, therefore were not examined, but their original descriptions and photo of habitus were used.

The material studied is deposited in the following collections:

BMNH - The Natural History Museum, London, United Kingdom (M. BARCLAY);  
HNHM - Hungarian Natural History Museum, Budapest, Hungary (O. MERKL);  
DBET - Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland (L. BOROWIEC).

#### TAXONOMY

##### **Genus *Adelostoma* DUPONCHEL, 1827**

*Adelostoma* DUPONCHEL, 1827: 342. Type species: *Adelostoma sulcatum* DUPONCHEL, 1827: 342-343.

##### **Subgenus *Zarudnyonymus* SEMENOV & BOGATSHEV, 1947**

*Zarudnyonymus* SEMENOV & BOGATSHEV, 1947: 175-176. TYPE SPECIES: *Zarudnyonymus persis* SEMENOV et BOGATSHEV, 1947 (by monotypy). – ARDOIN 1976: 148-149; KASZAB 1981: 367; KWIETON 1983: 56-60.

*Zarudnyonymus* (subgenus): KWIETON, 1983: 60.

*Falsaspila* KOCH, 1952: 28. TYPE SPECIES: *Falsaspila batesi* (HAAG-RUTENBERG, 1875) (synonymized by ARDOIN, 1976: 149).

*Adelostomoides* CARL, 1991: 24-25. TYPE SPECIES: *Adelostomoides grandis* (HAAG-RUTENBERG, 1879) (by monotypy). **syn. nov.**

***Adelostoma (Zarudnyonymus) borowieci* n. sp.**  
(fig. 1)

ETYMOLOGY

Named in honour of Dr. Lech BOROWIEC, collector of the holotype.

TYPE LOCALITY

India, Maharashtra, Satara Distr., Wai.

TYPE MATERIAL

Holotype. (DBET): [first label] INDIA, Maharashtra, Satara Distr., Wai, 4 X 2005, caught, leg. L. Borowiec; [second label] INDIA Expedition 2005, Dept. of Biodiversity and Evol. Taxonomy, Wrocław University.

DESCRIPTION

Size of holotype 6.0 x 2.0 mm. Dark brown, dull shiny, with tarsal claws, last tarsi and apical antennomere red-brown. Body narrow, parallel.



1. *Adelostoma (Zarudnyonymus) borowieci* n. sp. (holotype). Photo L. BOROWIEC

Head 1.15 times longer than broad, 0.76 narrower than pronotum. Glabrous, sculptured with net like surface composed of holes which are of the same size as eye facet. Ocular keels approximately as high as midlongitudinal keel. Clypeus cut out in the middle and with two small teeth in the middle of the latter. Antennae 1.31 longer than width of head, covered densely with yellow-white setae, proportion of antennomeres see fig. 1.

Pronotum nearly square in shape, subcordiform, widest in the middle. Surface sculptured with net like holes which are approximately two times larger than eye facet and gently pilose. Parallel keels inconspicuous but complete. Anterior and posterior angles extended to spikes. Lateral margins of pronotum irregularly serrate especially in the anterior half and with some long hairs.

Elytra parallel, with three longitudinal keels on each elytron. Space between keels irregularly deeply punctate, surface between those punctures sometimes with small tubercles, smaller than eye facet. First (inner) and third (outer) keel connected together anteriorly and posteriorly, the middle keel is not jointed with them. Entire surface of elytra gently covered with short and long hairs, the latter especially at apical part of elytra.

Legs shagreened and covered densely with yellow-white setae.

Entire ventral side sculptured with net like holes and covered with long yellow-white setae. Epipleural carina developed only apically.

#### DIFFERENTIAL DIAGNOSIS

This species has specific position within the subgenus *Zarudnyonymus* because it resembles *Adelostoma* (Z.) *grande* in general habitus, but is slimmer and lacks prolongation of antennomere 3. The structure of antennae is on the other hand identical with *A.* (Z.) *batesi*, but can easily be distinguished by general appearance. *A.* (Z.) *borowieci* has subcordiform, square formed pronotum with anterior margin only little broader than posterior margin, while in *A.* (Z.) *batesi* the pronotum is distinctly transverse, cordiform and anterior margin of pronotum is much broader than posterior margin. From *A.* (Z.) *abyssinicum* and *A.* (Z.) *gilloni* it differs with denticulate lateral margin of pronotum.

#### *Adelostoma* (*Zarudnyonymus*) *grande* HAAG-RUTENBERG, 1879

*Adelostoma grande* HAAG-RUTENBERG, 1879: 294-295. – KOCH, 1935b: 268-269.

*Adelostomoides grandis*: CARL, 1991: 24-25 (with photo of habitus).

*Zarudnyonymus persis* SEMENOV & BOGATSHEV, 1947: 176-177. – ARDOIN, 1976: 149. **Syn. nov.**

*Adelostoma* (*Zarudnyonymus*) *persis*: KWIETON, 1983: 60.

*Falsaspila perissinottoi* CANZONERI, 1965 (synonymized by ARDOIN, 1976: 149).

#### TYPE LOCALITY

Mesopotamia.

#### TYPE MATERIAL EXAMINED

*Adelostoma grande*: The holotype (BMNH): [first label] Type, [second label] Mesopotamia, [third label] *Adelostoma grande*, Typ, Haag, [fourth label] F. Bates, 81 – 19., [fifth label] Holotypus, *Adelostomoides* gen. n. *grandis* H.-R., det. Carl, 1990.

*Zarudnyonymus persis*: The paratypes (1 HNHM): [first label] 28. III. 04 [1904], Zarudny [lgt.]; [second label] *Zarudnyonymus* gen. nov. *persis* n., Typ, A. Bogačev & A. Semenov-Tian-Shansky det.; (1 HNHM): same label data as previous but 15. III. 04 [1904].

#### ADDITIONAL MATERIAL EXAMINED

(1 HNHM): IRAN, Prov. Büyer Ahmad., 3 km N of Sisaht., 51.23.21E, 31.9.22. N, 2700 m, 10-12.V.1998, leg. Gy. Fábán & K. Székely; (1 HNHM): IRAN, Prov. Mazandaran, Razi, 1900 m, 24. IV. 1999, leg. N. Rahmé; (1 HNHM): IRAN, Fars, 3 km W of Sangar, 18.04.1999, 2000 m, leg. Rahmé N.; (1 HNHM): 1. V. 1972, Ali-Abad Kamin, IRAN, R. Naviaux leg.

#### DISTRIBUTION

Iran, Palestina.

#### REMARKS

When examining paratypes of *Zarudnyonymus persis* (type species of the genus *Zarudnyonymus*), I found that this species has prolonged antennomere 3, which is diagnostic character for the genus *Adelostomoides* CARL, 1991. Therefore I compared it with the holotype *Adelostoma grande* (type species of the genus *Adelostomoides*) and discovered that these species are identical. For that reason *Z. persis* has to be synonymized. I agree with SCHAWALLER (2004) who pointed out that the prolonged antennomere 3 is just species-specific character because of the existence of *Adelostoma waterhousei* SCHAWALLER, 2004 (also having antennomere 3 prolonged) from Socotra which is member of monophyletic genus *Adelostoma* (subgenus *Adelostoma*).

### *Adelostoma (Zarudnyonymus) batesi* HAAG-RUTENBERG, 1875

*Adelostoma batesi* HAAG-RUTENBERG, 1875: 426-427. – KOCH, 1935a: 40.

*Falsaspila batesi*: KOCH, 1952: 28. – GRIDELLI, 1953: 41; KOCH, 1965: 125-126; FERRER, 2001: 102.

*Zarudnyonymus batesi*: ARDOIN, 1976: 149. – KASZAB, 1981: 367; SCHAWALLER, 1993: 106.

*Adelostoma (Zarudnyonymus) batesi*: KWIETON, 1983: 60.

#### TYPE LOCALITY

Yemen.

#### TYPE MATERIAL EXAMINED

*Adelostoma batesi*: The paratype (BMNH): [first label] Type; [second label] *Adelostoma batesi* Haag., Type; [third label] F. Bates, 82 – 19.

#### DISTRIBUTION

Arabia, Yemen, Oman.

MODIFIED LIST OF *ADELOSTOMA* SPECIES (ACCORDING TO ARDOIN, 1976) OF THE SUBGENUS *ZARUDNYONYMUS* SEMENOV & BOGATSHEV, 1947:

<i>A. (Z.) batesi</i> HAAG-RUTENBERG, 1875	Arabia, Yemen, Oman
<i>A. (Z.) abyssinicum abyssinicum</i> (HAAG-RUTENBERG, 1875)	Ethiopia, Somalia
<i>A. (Z.) a. hirsutum</i> (KOCH, 1935)	Egypt
<i>A. (Z.) borowieci</i> <b>n. sp.</b>	W India
<i>A. (Z.) gilloni</i> ARDOIN, 1976	Senegal, Niger
<i>A. (Z.) grande</i> HAAG-RUTENBERG, 1879	Iran
= <i>Zarudnyonymus persis</i> SEMENOV & BOGATSHEV, 1947 <b>syn. nov.</b>	
= <i>Falsaspila perissinottoi</i> CANZONERI, 1965	

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